Capstone Project -1

Que.No1 Identify Business Process Model for Online Agriculture Store- (Goal, Inputs, Resources, Outputs, Activities, Value created to the end Customers)

Ans

Goals: To provides farmer with easy access to agricultural products like fertilized seeds & pesticides through an online platform.

Inputs: Farmer's requirements for products, manufactures details and inventory, internet connectivity.

Resources: online applications (web/mobile) manufactures, delivery services, customers support team, development team.

Activities: 1. Manufactures upload product details inventory, pricing etc.

2. Farmers browse the platform to select require item.

3. Farmers place orders and specify delivery locations.

4.delivery team ensures products reach farmer.

5.Customer support helps with any issues during the process.

Outputs: Order agricultural products delivered to farmer's locations efficiently and reliably.

Value created: Enhance farmer's access to quality agricultural products.

- Reduces dependency on local suppliers.
- Provides manufactures with direct channels to sell their product.

Que. No 2 SWOT analysis

Ans

Strengths:	Weakness:
Direct communications	Limited internet connectivity
Accessibility	operational challenges
Comprehensives solution	Initial cost overheads
Opportunities:	**Threats:**
Market expansions	Competitions
Data collections	Dependences on manufactures
Partnerships	

Que. No 3 Feasibility studies

Ans **Technology:** Based on the database admin, Payment gateways, Security and API's

Hardware: Servers to host the web and mobile application, reliable network infrastructures for smooth communication.

Software: Development in along with database management systems, APIs for real time communications and e-commerce functionalities.

Resources: Technical Expertise, Training, Delivery system, Customer support.

Budget: 2 crores allocated as CSR funding, Sufficient to cover development, infrastructure marketing and Cost-effectiveness.

Time frame: 18 months allocated for project development and deployment seems achievable given the current resources and team set up.

Que.No4 what is GAP Analysis?

Ans It is an analytical technic in which we understood that what is current state and desired future state of particular projects. According to my understanding gap analysis is difference between AS-IS and TO-BE.

Current stage (AS-IS)

1) Farmers are used traditional technic go to physical agricultural shop and buy fertilizers, seeds and pesticides.
2) There is no closed link between manufactures and farmers.
3) There is not available home delivery facilities.
4) Farmers should not able to choose agricultural product from large product segment.
5) Farmers don't have platform to give feedback to agricultural product manufacture company.
6) Farmers cannot be able to buy product at anywhere and anytime.

Desired Future State (TO-BE)

1) Farmers will be able to go online agriculture product store to buy fertilizers seeds and pesticides.
2) This new application should be able to accept the product (fertilizers, seeds, pesticides) details from the manufactures and should be able to display the to be Farmers.
3) There is available of home delivery facility.
4) Farmer should able to choose agricultural product from large product segment.
5) Farmers have platform to give feedback to agricultural product manufacture company.
6) Farmers can be able to buy product at anywhere and anytime.

Question 5- Risk Analysis

It is study of uncertain events or conditions which can have impact on either cost, time, scope or quality of project.
Risk can be an event when can show the progress of the project or something cause a failure.

BA Risks-

1) Improper project planning
2) Improper requirement gathering
3) Lack of executive support
4) Scalability understanding
5) Improper use of elicitation technic
6) Improper stakeholder analysis
7) Stakeholder not able to provide the proper requirement.

Process/Project Risk

1) Online agriculture product stores new to market.
2) New applications should be able to display the product details to farmers.
3) Budget overons:2crores may not be sufficient if there are unexpected delays or increased scope.
4) Timeline Delays: The allocated 18 months might extend due to unforeseen technical or operational challenges.
5) Is Time and budget being sufficient to this project.
6) Unavailability of skilled employee during the project.
7) Communication gap

Question 6-Stakeholder Analysis (RACI MATRIX)

It is the study of identify who are the key stakeholder who can take decision are the influences of project.

RACI Matrix (R-responsible, A-accountable, C- Consulted and Informed)

Role/stakeholder	Responsible(R)	Accounted(A)	Consulted(C)	Informed(I)
Mr. Henry(founder)		A	C	I
Mr. Pandu (financial)			C	I
Mr. Dooku (project coordinator)	R		C	I
Committee (Henry, Pandu, Dooku	R	A		I
APT-IT solutions (project Executives)	R			I
Mr. Kartik (Delivery Head)	R		C	I
Peter, Kevin, Ben (farmer representation)			C	I
Java Developers network Admin	R		C	I
Tester (Jason and Alekya)	R		C	I

Question7 Business Case Document

Ans Why is the Project Initiated?

In case study Mr. Henry are successful Businessman and one of the wealthiest Persons in the city and he wants to help others to fulfil their dreams. One day Mr. Henry Meets his childhood Friends Peter, Kevin and Ben (all are Farmers). The Mr. Henry plan to develop online agriculture Store to solve Farmers Problem.

What Is the current problem?

1) Farmer are used traditional technic go to physical agricultural shop and buy fertilizers, seeds and pesticides?
2) There is no closed link between manufacture and farmers?
3) There is not available home delivery Facility?
4) Farmers should not able to choose agricultural product from large product segment.

With this project how many problems could be solved?

With the help of this project, we are able to solve following problem

1) Farmers will be able to go online agriculture products store to buy fertilizers, seeds, and pesticides.
2) This new application should be able to accept the product (fertilizers, seeds, pesticides) details from the manufactures and should be able to display them to the farmers.
3) There is a available home delivery facility.
4) Farmer should able to choose agricultural product from large product segment.

What is the Resource Required?

1) Mobile applications of online agriculture product store
2) Agricultural web store

Time frame to recover ROI?

This project is initiated under CSR activity. Budget for this project are 2 crore INR and 18 months duration.

How to identify stakeholders?

According to me a stakeholder is any person or group of persons or an organization that are directly and indirectly effected or impacted by this online agriculture store.

Question no 8

Ans 1) Planning

In the Planning phase they Discuss about what are the user Registration steps. Which type of login credential are Required and which Page Show After Logout. If log in, then which type of Dashboard landing page. Which options available for manufactures to sale the product how the manufacturer connects with farmer directly. What's thing which show at farmer's log in page are important. How many things farmer should do from this application? All above question solves at planning stage of SDLC.

 I need to understand assumptions and constrains along with business rule and goal For the purpose of proper planning I need to understands the project from PM Develop some strategic Plan for conducts stakeholder's analysis. Understood How to look like farmer's application home page.

2) Requirement analysis

At this stage BA take meeting with all project stakeholder (external) Discuss on User registration, User Login, Logout, Dashboard and tickets. Also, BA gathered Information of all planning phase question. At requirement analysis I used prototype technic to gather some extraordinary information and this all my Also BA gathered Information of all planning phase question. At requirement analysis I used prototype technic to gather some extraordinary information and this all my analysis show to stakeholder and then apply as per the requirements.

As BA I need to identify stakeholders and documents

Draw UML Diagram for online agriculture product store

Prepare functional requirements from business requirements

As an BA need to prepared RTM from SRS from client. We know that SRS is the first legal binding doc between the business and the technical team

3) Design

Following points discuss in Design

Lay out-Responsive web design

Business Rule- clear session on log out

Colour scheme- Blue/Grey

Programming language- java

As an BA I need prepare test case of online agriculture product store from the use case diagram

Always communicates with client on the design and solution documents.

I design I will also initiate the preparation of end user manuals

Updates RTM on time

GUI designer will look into transient classes and designs all possible screens for the IT solution.

As a team we need to conduct regular status meeting with technical team and the client and tuning client for participation in UAT.

Update RTM

Testing

BA performs high level testing

Test data is requested by BA from client

Take signoff from client-on-client project

Deployment

Plans and organizes training sessions for end users.

Coordinates to complete and share end user manuals.

Sequential Waterfall

is the most common and classic of life cycle models, also referred to as linear-sequential life cycle model. This model is very easy to understand and use. In this model each Phase must be completed in its entirety before the next phase can begin. In the sequential It model we have chance to take review takes Place to determine if the project is on path and whether or not to continue or discard the project.

Stages of Waterfall Model	Resources	Artifacts
Requirements Gathering	BA- Mr Kunal PM-Mr Vandana	BRD
Requirements Analysis	BA- Mr Kunal PM-Mr Vandana Tech Team- Sol Arch, NW Arch- Mr.	FS/FRS, SSD, SRS, RTM
	Mike DB Arch-John	
Design	Tech Team – Sol Arch, NW Arch- Mr. Mike, DB Arch-John, GUI Designer	HDD/ADD Solution Document
Development Coding	Programmers- Ms. juhli Developers- Mr Teyson, Ms Lucie, Mr Tucker, Mr Bravo	LDD/CDD Application
Testing	Testers- Mr Jason and Ms Alekya	
Unit, component System, System Integration, UAT		
PROCESS – Configuration management – PM- Mr Vandana		
Deployment & Implementation – Release Engineers		

Java Developers-

Java Developers have some software development skills and responsibilities

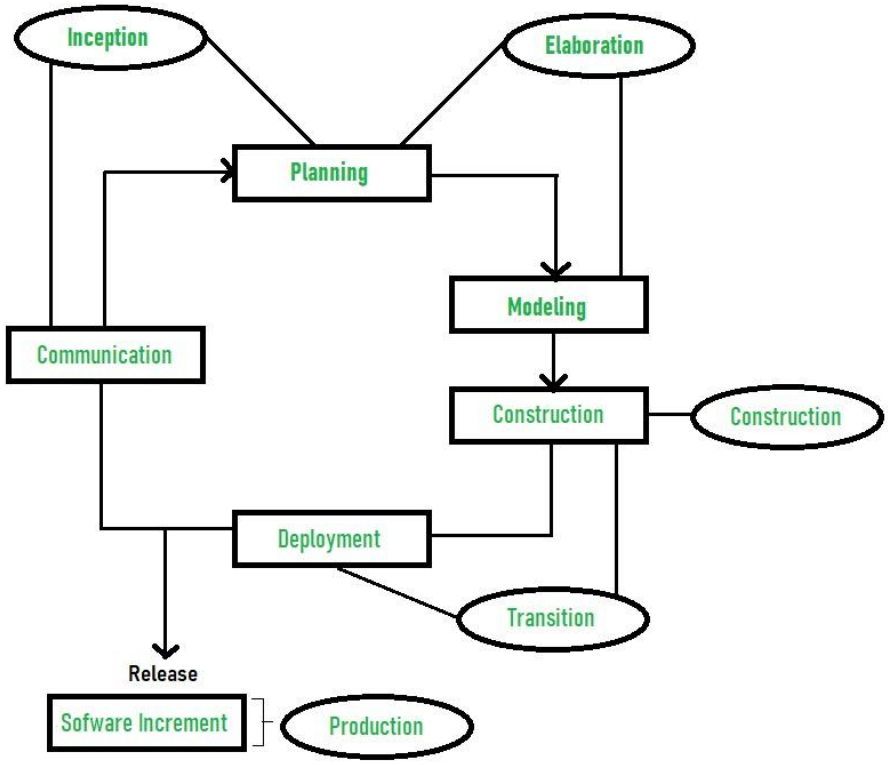
Designing, implementing and maintaining Java-based applications. Contributing in all phases of the development lifecycle. Writing testable, scalable and efficient code. Test and debug new applications and updates.

Work Products (what)-

In this case we are developed online agriculture store. We used Iterative model for produced working through the process.

Tasks (How)-

It describes a unit of work assigned



Four Project Life Cycle Phases

Inception-

Communication and planning are the main ones.

Identifies the scope of the project using a use-case model allowing managers to estimate costs and time required.

The project plan, Project goal, risks, use-case model, and Project description, are made.

Elaboration-

Planning and modelling are the main ones.

A detailed evaluation and development plan is carried out and diminishes the risks.

Executable architecture baseline.

Construction-

The project is developed and completed.

System or source code is created and then testing is done. Coding takes place.

Transition-

The final project is released to the public.

Transit the project from development into production.

Defects are removed from the project based on feedback from the public

Evolutionary -Spiral

Spiral model is combination of waterfall model iterative model. Each phase of spiral model begins with design goal and end with client reviewing. Software is developed in a series of incremental releases.

Following are the stages of spiral model for developing online agricultural product store.

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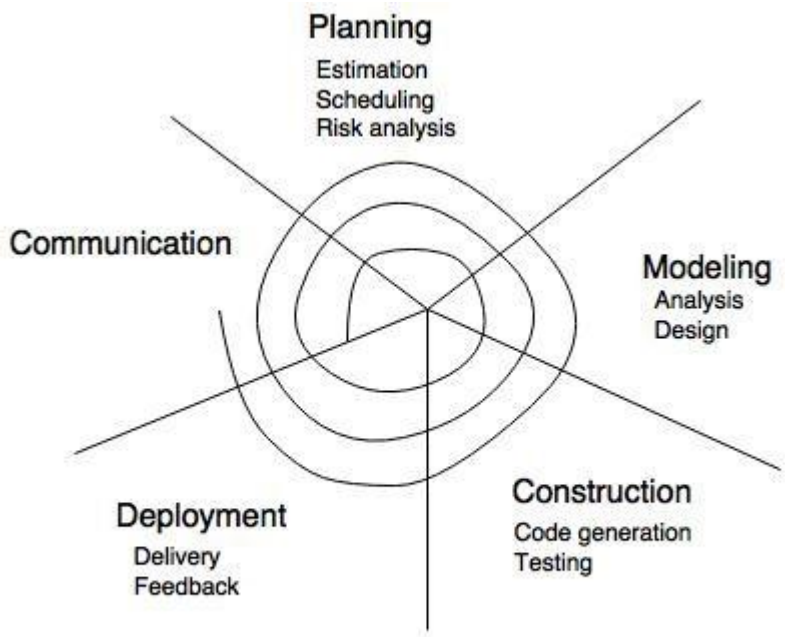


Fig. - The Spiral Model

The spiral model has four phases-

- Planning

In Planning Phase Requirement gathering for online agricultural product store by business analyst.

- Risk analysis

In the risk analysis phase, a process is undertaken to identify risk and alternative solution to online agricultural product store. A prototype is produced at the end of the risk analysis phase.

- Engineering

Actually, online agricultural product store software is produced in the engineering phase, and this phase end with testing phase.

- Evaluation

This phase allows to customers (farmers) to evaluate the online agricultural product store application (web) is the output of the project to date before the project continues to the next spiral.

Agile-

Agile Methodologies can be implemented where faster delivery is required, in this method no documentation is required coding is itself forms as documentation, Agile is the faster method to achieve the goal. It is satisfying the customer through early and continues delivery of the valuable software, Changes can easily have accepted and implemented in any phase of SDLC,

Question9- Waterfall RUP Spiral and Scrum Models

Waterfall- A Waterfall model is a traditional model in IT Company. The waterfall model is a classical model used in system development life cycle to create a system with linear and sequential approach. A Sequential process where each phase (Requirement gathering, Desgin, Development,Testing,Deployment) must be completed before the next begins. Simple to manage due to its linear approach ,but lacks flexibility to accommodate changes.

RUP Model-stands for Rational Unified Model This is a software development process from rational, a division of IBM, it divides the development process into four distinct phases that each involve business modelling. Analysis and design, implementation, testing and deployment,In RUP there are four project life cycles

A) Inception

B) Elaboration

C)Construction

D)Transaction

SPRIAL-Combines iterative and risk-driven approaches. Focuses on continues risk analysis and allows flexibility in adapting requirements and design. Suitable for complex and high-risk projects but demanded strong expertise in risk managements.

Design- Design phase starts with the design in the baseline spiral and involves architectural, logical design of modules, physical product design and final design in the successive spirals.

Construct- Construct phase refers to development of the final's software product at every spiral. In the spiral when the product is just thought and the design is being developed.

Evaluation and Risk analysis- Risk analysis includes identifying, estimating, and observing technical feasibility such as schedule slippage and cost overrun.

SCRUM- (Agile methodology)

1) Emphasizes Flexibility, collaboration and iterative delivery. Best for project where requirement is dynamic and can evolve over time. Requires close team collaboration and frequent user feedback. Scrum is a lightweight agile process framework used primarily for managing software development. Scrum is often contracted with so called “Waterfall” approach, which emphasizes up-front planning and scheduling of activities, followed by execution The Scrum models have 4 steps also called phases in scrum.
   Step1: Product Backlog Creation
   Step2: Sprint planning and creating backlog
   Step3: Working on sprint
   Step4: Retrospective and the next sprint planning.

Question no 10- Waterfall Vs V-model

The main difference between Waterfall model and V-model is that in waterfall model, the testing activities are carried out after the development activities are over. On another hand V-model activities start with the first stage itself.

Waterfall model	V-model
It is continuous process.	It is simultaneous process.
Testing activities are accomplished after the development activities are over.	Testing activities starts with the first stage itself.
Software made in waterfall model has most defects compared to one made V fall model.	Software made in V-model has lesser defects than the one Waterfall model
Higher risk as defect are found late in the process.	Lower risk as defected early.
Less flexible, any require restarting the process from earlier phases.	More flexible as errors can be identified and addressed earlier.

Question no 11- justify your choice

As a BA I choose V model for this project and following are the reason Which influences me to choose V model instances of choosing Waterfall model and other models.

V-model is based on verification and validation of each phase of developing online agricultural product store.

The model allows to completed each phase must before go to next phase. Testing of developing online agricultural product store is planned in parallel with a corresponding phase of development in V-model.

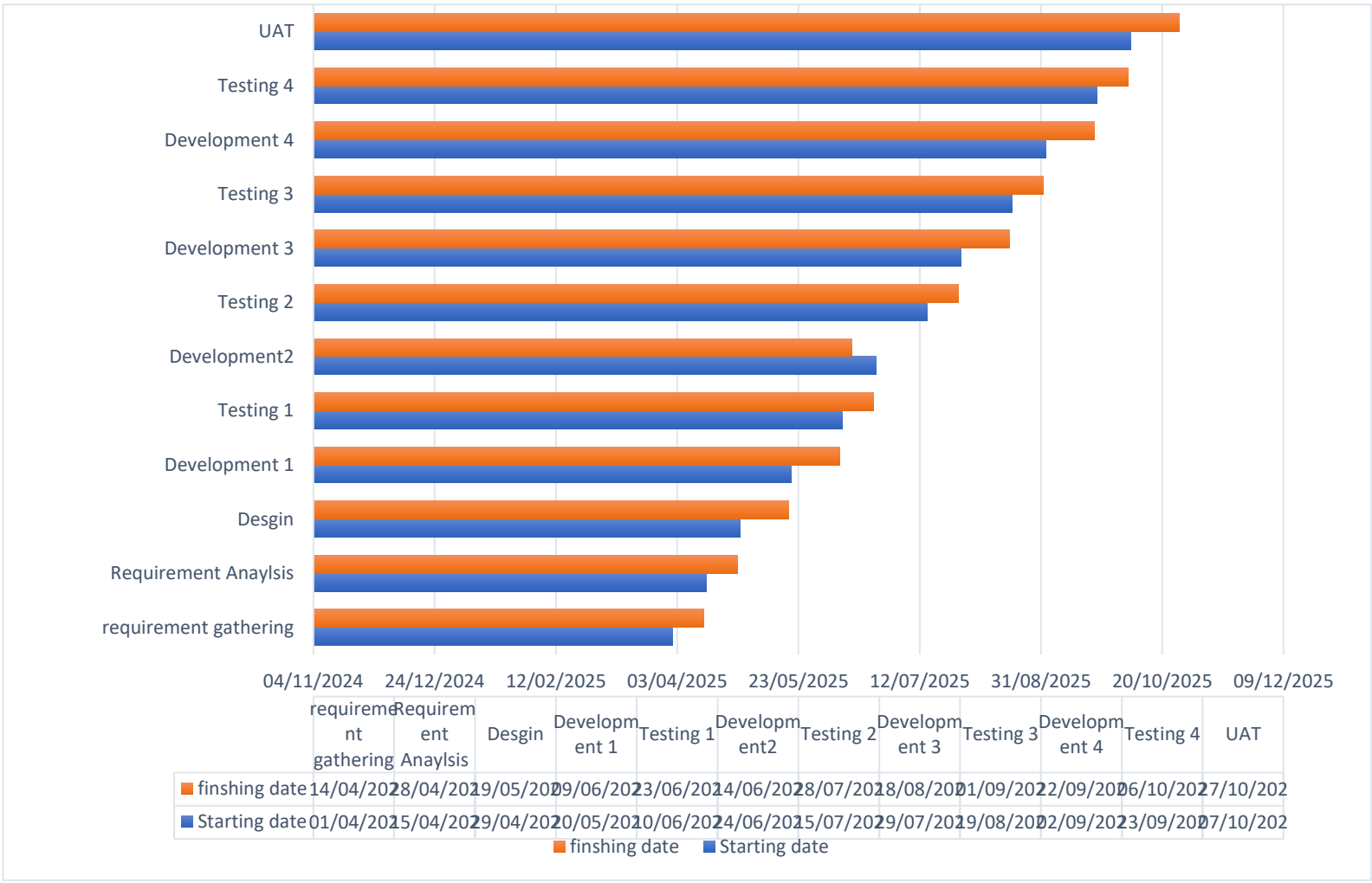
This V model properly works with small projects like developing online agricultural product store where requirements are easily understood.

In V model, testing activities like planning, test designing happens well before coding. This saves a lot of time. Hence higher chances to get success model.

Question no 12- Gantt Chart

Ans-

Phases/Tasks	Duration	Starting Date	finishing Date	Resources Involved
Requirement gathering	2 weeks	01/04/25	14/04/25	PM, BA
Requirement Analysis	2 weeks	15/04/25	28/04/25	PM, BA
Design	3 weeks	29/04/25	19/05/25	PM, BA, JAVA Developers
Development Phase 1(D1)	3 weeks	20/05/25	09/06/25	Java Developer
Testing Phase 1(T1)	2 weeks	10/06/25	23/06/25	Tester
Development Phase 2(D2)	3 weeks	24/06/25	14/07/25	Java Developer
Testing Phase 2(T2)	2 weeks	15/07/25	28/07/25	Tester
Development Phase 3 (D3)	3 weeks	29/07/25	18/08/25	Java Developer
Testing Phase 3(T3)	2 weeks	19/08/25	01/09/25	Tester
Development Phase 4(D4)	3 weeks	02/09/25	22/09/25	Java Developer
Testing Phase 4(T4)	2 weeks	23/09/25	06/10/25	Tester
UAT	3 weeks	07/10/25	27/10/25	PM, BA, Testers



Question no 13- Fixed Bids Vs Billing

Fixed Bid Model:

A Fixed Bid Project is billed using a Flat amount regardless of the number of hours worked. This flat amount can be applied to the project as a whole, or to each week or month or the project. Since Fixed Bid Projects are duration-based, they require a start and end date.

Biling Model:

hourly basis.3 lest consider in this model resources working in the project will be billed to the client on examples

PM-$130/Hr

Sol Architect-$55/Hr

Programmers-$50/Hr

Sr. Programmers-$80/Hr

Network Engineer-$80/Hr

DBA-$80/Hr

BA-$60/Hr

Timesheet Billing:

Timesheet billing is used by individuals organization and professionals that render services that includes the billable hour.

Question no 14

Ans **Design Stage Timesheet**

Days	Task/Activity	Hours Spent	Remarks
Monday	Requirement Elicitation	4 hrs	Gathering requirement from stakeholder
Tuesday	Drafting Functional Specification	5 hrs	Translating business needs into functional specs
Wednesday	Review &Approval of Design Documents	6 hrs	Validating documents align with the project scope
Thursday	Coordination with UI/UX Teams	3hrs	Ensuring designs are user-friendly and feasible

Development Timesheet of BA

Days	Task/Activity	Hours Spent	Remarks
Monday	Clarify Requirements to Development Team	4 hrs	Supporting developers for understanding specs.
Tuesday	Reviewing Traceability Matrix	3 hrs	Ensuring requirements align with development tasks.
Wednesday	Monitoring Development Progress	5 hrs	Identify gaps or deviations in deliverables.
Thursday	Risk Mitigation Discussion	2 hrs	Addressing potential risks in coding.

Testing Stage Timesheet of BA

Days	Task/Activity	Hours Spent	Remarks
Monday	Review Test Cases Prepared by QA	5 hrs	Ensuring test cases cover all requirements.
Tuesday	Execute Functional and Regression Testing	6 hrs	Participating in testing alongside QA teams

Wednesday	Defects Management & Reporting	4 hrs	Logging and prioritizing defects for resolution.
Thursday	Validation of Bug Fixes	3 hrs	Confirming resolved defects meet acceptance criteria.

UAT Timesheet of BA

Days	Task/Activity	Hours Spent	Remarks
Monday	UAT Preparation & Scenarios Documentations	4 hrs	Creating use cases for end user testing
Tuesday	Conducts UAT Sessions with Farmers	5 hrs	Ensuring application usability for target users
Wednesday	Collect Feedback During UAT	3 hrs	Analysis feedback for possible iterations
Thursday	Prepare Final UAT Reports	3 hrs	Summarizing findings for stakeholder review

Deployment and Implementation Timesheet

Days	Task/activity	Hours Spent	Remarks
Monday	Deployment Readiness Assessment	5 hrs	Ensuring all deployment criteria are meet
Tuesday	Post Deployment Verification	6 hrs	Validating application performance is live environment.
Wednesday	Training & Supports to Farmers/Users	3 hrs	Providing user guides and resolving queries
Thursday	Final Handover Documentation	4 hrs	Delivering complete project documentation